CHAPTER THREE

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TAKEOVERS AND VALUE TO SHAREHOLDERS

This chapter presents the results of empirical analysis of returns to shareholders of participating companies in takeovers. The results are analysed to measure the wealth impact of takeover attempt on shareholders of participating companies; and observe whether the market behaviour is consistent with semi-strong form of efficiency or not during the process of takeover.

The chapter is divided into three parts. First part presents the proposition regarding shareholders' wealth maximisation and market efficiency in the context of takeovers on the basis of empirical studies conducted in the U.K. and U.S.A. The wealth maximisation impact of shareholders of the target is analysed in both the types of takeover attempts *viz.*, successful and unsuccessful, and hostile and friendly. It is followed by measurement and analysis of cumulative abnormal returns (CARs) to expound the type of market efficiency witnessed during the period of takeovers in second part. The last part summarises the implications of Indian experience of wealth maximisation and market efficiency.

3.1. HYPOTHESES AND TAKEOVER MODEL

3.1.1 Shareholders' Wealth Maximisation Hypothesis

The economic theory offers two competing propositions about

the impact of takeovers on shareholders of participating firms. Under the classical theory, Manne (1965) views takeovers as value enhancing activity in which managers maximise shareholders' wealth. In contrast, under the managerial theory, Marris (1964), (also Williamson, 1969; Mueller, 1969) views the takeovers as an extensions of managers' own personal interests, undertaken for the purpose of increasing their own wealth or prestige. Empirical studies in the U.S. and the U.K. offer consistent results over the effect of takeovers on the target's shareholders. However, evidences on the bidder's shareholders are less convincing and inconclusive in both the countries. The scanning of studies conducted by Dodd and Ruback (1977), Bradley (1980), and Bradley, Desai and Kim (1983), Jensen and Ruback (1983), in the U.S., and Franks and Harris (1989), in the U.K. help us to formulate the following hypotheses:

H_0 = Takeover does not increase the wealth of the shareholders of the target companies. Mathematically, CARs = 0

H_1 = Takeover increases the wealth of the shareholders of target companies. Mathematically, CARs $\neq$ 0

The shareholders' wealth maximisation hypothesis assumes that:

(i) The takeover is an attempt by bidding firm to exploit the specialised resources by gaining control over the target and implementing higher valued operating

strategy that will increase the value of both the firms by achieving the synergy.

(ii) The announcement of the takeover attempt releases positive information about the participating firms which will be reflected by appreciation in their share prices.

(iii) Capital market conditions are perfectly competitive in a sense that shareholders are assumed to be homogenous group of wealth maximising individuals widely diffused to influence the result of the takeover individually; and therefore, the target shares will flow to that bidder who makes the best offer.

(iv) Resistance of the existing management to takeover or incorporation of anti-takeover amendments in corporate charter is in the interest of the shareholders.

3.1.2. **Efficient Market Hypothesis :**

In the context of release of information about takeover of the firm, Mandelker (1974) and Malatesta (1983) found the market to be efficient in its semi-strong form. It implies that share prices appropriately reflect all the publicly available information and immediately incorporate the news releases (related to takeover). A market behaviour is considered to be consistent with semi-strong form of efficiency when it does not show any statistically significant abnormal behaviour in share prices before and after the occurrence of the event.

3.1.3. **Event Study Methodology and Cumulative Abnormal Returns** Event study methodology is used to measure the impact of takeovers on shareholders' wealth and to test market efficiency following Fama, Fisher, Jensen and Ruback (1969) and Dodd and Ruback (1977). It aims at assessing the occurrence of abnormal behaviour around the event and provides a framework to measure the observed abnormality.

The abnormal return (AR_{it}) for security, i, for time, t, is defined as the difference between its actual ex-post return (R_{it}) and expected ex-post normal return ($R\tilde{}_{it}$) predicted by specified model on the basis of actual ex-ante returns on the security, i. There are two popular models for generating expected ex-post returns on security: Mean Adjusted Return Model and Market Adjusted Return Model (popularly known as Market Model). The former assumes ex-ante return on security, i,remain constant, K_i, and therefore, expected ex-post expected return ($R\tilde{}_{it}$) will also equal to K_i. The abnormal return (AR_{it}) according to this model defined as the difference between actual ex-post return (R_{it}) and constant return K_i. On the contrary, Market Adjustment Return Model does not assume ex-ante returns constant on security but varies with ex-ante returns on market portfolio. The expected ex-post returns on the security are estimated from actual ex-post returns on the market portfolio, on the basis of the definite relationship between ex-ante returns on the security and market portfolio. The expected ex-post returns thus arrived at more accurately represent the normal rate of return, if there had been no event. This ex-post normal rate

of return then used as a benchmark to identify the abnormality in actual ex-post returns. As Brown and Warner (1980) suggested, if ex-ante relationship is correctly specified, the difference between the actual ex-post return and expected ex-post return represents exactly the impact of the event. This provides more accurate estimate of the impact of the event as ex-post return in this case takes care of the influence of market wide events on return on security. Hence, the study uses Market Adjusted Return Model to generate the expected return across the securities.

The proxy for market portfolio is taken as Bombay Stock Exchange Sensitive Index (1978-79 = 100). Srinivasan (1992) suggested that the use of BSE Sensex or BSE National Index with simple and sophisticated procedures did not make a substantial difference to event study findings. The daily rate of change in BSE Sensex is taken as proxy for rate of return on the market portfolio. Mathematically, the abnormal return on security, i ,for time, t, is expressed as under :

$$\tilde{R}_{it} = \tilde{a}_i + \tilde{\beta}_i * R_{mt} + \tilde{e}_{it} \qquad (3.1)$$

Where,

$\tilde{R}_{it}$ = daily expected return on security, i, for time, t;

R_{mt} = daily expected return on market portfolio for time,t;

$\tilde{a}_i$ = constant term of the model for security, i;

$\tilde{\beta}_i$ = regression co-efficient of model for security, i;

$\tilde{e}_{it}$ = error term of the model for security, i, for time t.

The equation (3.1) represents simple regression equation and a~ and ß~ are ordinary least square (OLS) parameters from estimation period. The expected rate of return ($R\sim_{it}$) are predicted from equation (3.1) to calculate abnormal and cumulative returns across the sample companies. Mathematically, it can be expressed as under :

$$AR\sim_{it} = R_{it} - R\sim_{it} \qquad (3.2)$$

$$CAR\sim_{it} = CAR\sim_{it-1} + AR\sim_{it} \qquad (3.3)$$

Where,

$AR\sim_{it}$ = daily abnormal return for security, i, for time, t;

$CAR\sim_{it}$ = daily cumulative abnormal return for security, i, for time, t;

$CAR\sim_{it-1}$ = daily cumulative abnormal return for security, i, for time, t-1;

R_{it} = daily actual return for security, i, for time, t;

$R\sim_{it}$ = daily expected rate of return for security,i, for time, t, derived from equation (3.1).

The reliability of the inference made from the abnormal returns are made on the basis of its statistical significance. This statistical significance is judged by value of test statistic, *t*, the ratio of mean abnormal (or cumulative abnormal) return to its standard deviation in estimation period (for detailed calculation of t value, refer para. 1.6.3.). The study uses 0.95 confidence coefficient *i.e.*, p = 0.95, and therefore results are inferred at 0.05 level of significance (a = 1 - p = 0.05). On the occurrence of this event, the process of takeover by the bidder starts

culminating into success or failure. This process continues for some time period.

3.1.4. **Takeover Process :**

For computation of abnormal returns and measurement of market efficiency, study uses takeover as an event. To aid the analysis of CARs during this whole period, this can be segmented into four sub periods: (i) Pre-event Period, (ii) Event Date; (iii) Interim Period; and (iv) Post-event Period.

(i) Pre-event Period : This is the period of non-availability of information concerning the impending takeover of a target. During this period, the bidder secretly undertakes the valuation of the target to see that at what price the latter is worth taking over and what benefits can be derived out of the takeover. No information is available to the market participants about this exercise during this period. Therefore, share prices of participating firms, particularly of the target are not expected to show any abnormal behaviour during this period. However, owing to cornering of shares of the target, disequilibrium in demand and supply will be created leading to change in the share price.

(ii) Event Date : This is the day on which the news about the intention of takeover is publicly announced. Once the bidder decides to takeover the target, it either starts negotiations with the target management or makes an offer to target shareholders or makes public announcement of his intention or combination any of them. This process can be marked as event

period. As soon as the news about the takeover attempt is released, the market will raise the share prices of participating firms in anticipation of synergies that can be achieved by reallocation of target's and bidder's resources or improved management by target due to takeover attempt. Due to certain difficulties (discussed in para 1.6.4.) in identifying the event date, the study uses the event period as suggested by Brown and Warner (1985) to capture the abnormality of the event. The event share price of the target (P_{T0}) and the bidder (P_{B0}) is expected to be higher than their respective pre-event share prices (P_{T-1}) for the target and, (P_{B-1}), for the bidder. Symbolically,

$$P_{T-1} < P_{T0} \quad \text{and} \quad P_{B-1} < P_{B0}$$

(iii) Interim Period : This period begins with the end of the event period and ends with culmination of takeover as successful or unsuccessful one. In the interim period, the shareholders of the target have to decide whether to sell or hold the shares depending upon their expectation of post-event behaviour of share prices. If they expect that the post-event share price (P_{T+1}) will be higher than the offer price (S_0) they will not sell or tender the shares. The relevant question here is that as to why the bidder will offer more than the post-event expected price. The answer lies in the resolving the free-rider problem. The free-rider problem occurs when the bidder offers a price to the shareholders of the target firm less than the expected post-takeover share price but more than existing market price of the share of the target. In such a situation the shareholders

of the target would hold the shares and wait for the target being taken over to realise higher gains. Thus, it may result in to a situation where no one or very few of them tendering their shares, even if the offer price is higher than the current market price, enjoying free ride over the bidder and those who have tendered the shares (for detailed discussion, refer Appendix 3.1.). On the contrary, if they feel that the offer price (S_0) is more than the expected post-event price (P_{T+1}) then they all will tender the shares. Therefore, the condition for successful takeover, and selling of shares by the target shareholders is :

$$S_0 > P_{T+1} \text{ and } S_0 \geq P_{T0}$$

The gain to the shareholders of the bidder depends on the synergies (X_B) expected on takeover and premium (Y_B) paid by him over P_{T-1} (*i.e.*, $S_0 - P_{T-1}$). Therefore, the necessary condition for bidder to realise gain is :

$$X_B > Y_B \text{ and } P_{B+1} = P_B + X_B$$

Otherwise, the bidder would lose in successful takeovers.

An additional dimension concerns the response of the target to the takeover threat in this period. The target may assist or resist the takeover moves of the bidder. The resistance of the target leads to force the bidder to divulge more information about the target which may lead to increase in the share price. On the contrary, the assistance of the target may suppress the information about the gain of the takeover and therefore may either decrease or does not influence the share price during this period.

(iv) Post-Event Period

In the post-event period, the share prices of the target and the bidder are expected to behave on the basis of the result of the takeover. If the offer is successful, the share prices move to their expected level, P_{T+1} for the target and P_{B+1} for the bidder. If the take over attempt turns out to be unsuccessful the share prices will fall back to their pre-event level, P_{T-1} or P_{B-1}, or even lower than that when the cost of unsuccessful event is incorporated. If some valuable information about the target is released during the takeover process, then the target's share price may settle above its pre-event price, P_{T-1}, given the failure of the attempt.

Therefore, expected share price on successful takeover attempt :

(i) for the target would be

$$P_{T+1} \leq S_0 \quad \text{Where,} \quad S_0 \geq 0.$$

(ii) for the bidder would be

$$P_{B+1} = P_{B0} + X_B - Y_B$$

And, in the eventuality of unsuccessful attempt, the share price :

(i) for the target would be

$$P_{T+1} \geq P_{T0}$$

(ii) for the bidder would be

$$P_{B+1} \leq P_{B0}$$

Whether the actual behaviour of returns to the shareholders of the target firms is congruent with the hypothesised behaviour or not along with its implications forms the subject matter of discussion in the following sections.

3.2. ANALYSIS AND INTERPRETATION OF RESULTS

This part presents the analysis of the cumulative abnormal returns to shareholders of target companies, subject to takeover attempts. The analysis had been attempted separately for pre-event period, event period, interim period, and post-event period. Besides, aggregate analysis for these time segments of takeover process, the CARs have been analysed according to the outcome of the takeover *i.e*, successful and unsuccessful, and the strategy of the target to defend or collude the takeover process, *i.e*, assisted and hostile. Accordingly, the sample companies are classified into four classes *viz.*, successful vs unsuccessful takeovers friendly vs hostile takeovers, successful hostile vs successful friendly takeovers, unsuccessful hostile vs unsuccessful friendly takeovers.

Aggregate Analysis: Cumulative abnormal returns (CARs) of all the thirty four target companies around the takeover attempt are analysed together for measuring the wealth impact of takeover attempt on shareholders of target firm.

Friendly vs Hostile Takeovers - Class I : In this class, the sample companies were classified on the basis of attitude of the target management to takeover attempt. Those companies who resisted the takeover attempt were marked as hostile takeovers; the rest of them were marked as friendly takeover.

Successful vs Unsuccessful Takeovers - Class II: Here, the sample companies were classified on the basis of the outcome of the takeover attempt. Those companies in which the bidder was reportedly successful in taking over the control of target company was classified as successful and the rest of them were marked as unsuccessful takeovers.

The separate measurement of the impact of hostility or assistance on success or failure of takeover was still not possible in above classification. For example, successful takeovers in class II reflected the combined effect of hostile as well as friendly takeovers; they did not allow to analyse separately the impact of the successful and friendly takeovers, and the successful and hostile takeovers. Hence, the sample companies were reclassified in class III and class IV.

Successful and Friendly vs Successful and Hostile Takeovers - Class III : This category includes successful targets. Since, the effort is to know the impact of response of the target to takeover in terms of assistance or hostility, the successful targets were classified as successful and friendly vs successful and hostile takeovers.

Unsuccessful and Friendly vs Unsuccessful and Hostile Takeovers - Class IV : This category includes unsuccessful targets. Similar to class III above, they were classified as unsuccessful and friendly vs unsuccessful and hostile takeovers.

3.2.1. **Aggregate Analysis of Targets**

The results of daily cumulative abnormal returns (CARs) analysis with two hundred days interval from -50 day to +150 day for all the sample companies taken together are presented in Appendix 3.2. The summarized results for different periods are given in Table No.3.1. The daily CARs are plotted on a graph from -50 day to +150 day as in Fig.3.1. The analysis of the data contained therein permits to infer the following:

(i) The pre-event period (-50 day to -1 day) revealed insignificantly low abnormal and cumulative returns. The CARs during this period were 0.024 which was statistically insignificant (t value:0.301).

(ii) The event period (0 day to +5 day) revealed substantial and significantly high cumulative abnormal returns. The CARs during this period were nearly 0.495 which was statistically highly significant (t value:17.898).

(iii) The interim period (+6 day to +50 day) revealed slow adjustment process in share prices depicting consistently positive CARs. The CARs from +6 day to +50 day were 0.145 which were statistically significant (t value: 1.906). While analysing further the CARs from +6 day to +25 day and from +26 day to +50 day were 0.107 (t value: 2.115) and 0.038 (t value: 0.665) respectively, implying no major abnormality in the latter phase of the interim period. Combining the event and the interim period, the targets experienced

substantial CARs of 0.641 with statistically significant t value of 7.898.

(iv) The post-event period (+51 day to +150 day) revealed substantial negative CARs wiping out more than one third of the increase in the event and the interim period. They were -0.174 statistically significant. (t value : -2.164). This was a matter of concern for the interpretation of the result. Analysing further, the CARs from +51 day to +75 day, +76 day to +100 day, and from +101 day to +150 day were -0.083 (t value:-1.038), -0.044 (t value: -0.779), and -0.174 (t value:-2.164) respectively, implying the reoccurrence of significant abnormality after +101 day.

(v) Analysing the overall process, from -50 day to +150 day, the CARs were 0.408 which were statistically significant (t value : 5.234).

The above results imply that for the takeover targets, the pre-event period does not show statistically significant non-zero abnormal returns; the event period consistently showed significant and substantial non zero abnormal returns; the interim period characterises lethargic adjustment process with non significant positive abnormal returns; and finally, the post takeover period entails statistically significant negative abnormal returns. The overall takeover process realises net positive and statistically significant abnormal returns.

Analysing the wealth impact, on an average the target gained 66.5 per cent due to initiation of takeover attempt. This is comprised of of 49.5 percent in event period, 14.5 percent in interim period, and 2.5 percent in pre-event period. Though in post-event period it lost 25.7 percent, still it realised net 40.8 percent abnormal returns in overall takeover process.

The market behaviour seemed consistent with semi-strong form of efficiency. The pre-event period showed very small and statistically insignificant abnormal returns followed by the substantial and significant abnormal returns in event period. The interim period characterised slow but statistically insignificant adjustment process of abnormal returns. The patterns of CARs in these three time segments reflects consistency of market behaviour with semi-strong form of efficiency. However, though small but consistent and statistically significant negative CARs in post-event period questions the consistency of market behaviour with semi-strong form of efficiency. Had this decline been accompanied by relevant information releases, then it would have supplemented the claim that the market behaviour was consistent with semi-strong form of efficiency. Otherwise, the speculation and rigging of the share prices during the event and the interim periods could be suspected. Thus, the evidence is weak for upholding that the market behaviour was consistent with semi-strong form of efficiency.

3.2.2. **Class I : Hostile vs Friendly Takeovers**

The results of daily cumulative abnormal returns (CARs) analysis, with two hundred days interval from -50 day to +150 day for friendly and hostile takeovers are presented in Appendix No.3.3 and 3.4 respectively. The daily CARs for hostile and friendly takeovers are plotted on a graph from -50 day to +150 day in Fig. 3.2 and 3.3 respectively. The analysis of the data contained in Table 3.2 permits to infer following.

(i) The pre-event period (-50 day to -1 day) for hostile takeovers consistently positive but statistically insignificant abnormal returns. They were 0.062 (t value:0.354), 0.008 (t value:0.065) and 0.054(t value:0.436) for -50 to -1 day, -25 to -1 day, and -50 to -26 day respectively. However, for friendly takeovers, the pre-event period showed mixed variation (positive as well as negative) in behaviour of CARs. Quantitatively they remained small and statistically insignificant. They were -0.005 (t value:-0.074), -0.016 (t value:-0.032) and 0.011 (t value:0.215) for -50 to -1 day, -25 to -1 day, and -50 to -26 day respectively.

(ii) The event period (0 day to +5 day) for both the hostile and friendly takeovers revealed substantial and statistically significant cumulative abnormal returns. The CARs during this period were 0.595 (t value:9.796) and 0.495 (t value:17.432) respectively for hostile and

friendly takeovers.

(iii) The interim period (+6 day to +50 day) for hostile takeovers revealed consistently positive and statistically significant CARs. However, for friendly takeovers, it again showed mixed results with overall negative CARs. For hostile takeovers, the CARs from +6 day to +50 day were 0.353 with statistically significant t value of 2.134; analysing further the CARs from +6 day to +25 day and from +26 day to +50 day were 0.22 (t value: 1.99) and 0.133 (t value: 1.082) respectively. This implies subsequent information releases pushed up the share prices due to hostility of the deal. The combination of the results of the event and the interim period showed that the hostile targets experienced substantially high and statistically significant CARs of 0.945 (t value:5.365). In contrast, for friendly takeovers, the CARs from +6 day to +50 day were -0.015 and statistically insignificant (t value of -0.226). Analysing further, the CARs from +6 day to +25 day and from +26 day to +50 day were 0.023 (t value: 0.524) and -0.038 (t value: -0.772) respectively, implying the immediate closure of the deal settling the uncertainty. Combining the results of the event period and the interim period, the friendly targets experienced the significant CARs of 0.408 (t value:5.767) but substantially less than the hostile ones.

(iv) The post-event period (+51 day to +150 day) for the hostile as well as friendly takeovers, revealed substantial but negative CARs which were statistically insignificant for the former and significant for the latter. For the hostile targets, the CARs, from +51 to +150 day were -0.319 with statistically insignificant t value of -1.293. Analysing further, the CARs from +51 day to +75 day, +76 day to +100 day, and from +101 day to +150 day were 0.006 (t value:0.0510), -0.041 (t value: -0.332), and -0.284 (t value:-1.63) respectively, implying the inability to sustain the share price at a level achieved in the event and the interim period. On the other hand, for the friendly targets, the CARs, from +51 to +150 day were -0.196 with statistically significant t value of -1.977. Analysing further, the CARs from +51 day to +75 day, +76 day to +100 day, and from +101 day to +150 day were -0.078 (t value:-1.571), -0.051 (t value: -1.02), and -0.067 (t value:-0.963) respectively, implying continued negative drift of CARs in post-event period with statistical significance.

(v) Analysing the overall process, from -50 day to +150 day, the hostile targets experienced significantly positive CARs (0.688, (t value:1.967)), while the friendly targets also experienced positive but insignificant CARs (0.207, (t value: 1.474)).

The above results imply that for the hostile and the friendly targets, the pre-event period does not show statistically significant non-zero abnormal returns. The event period consistently shows significant and substantial non zero abnormal returns in both the cases. The interim period, for the hostile ones, pushes the positive CARs up to a new peak. On the contrary, for the friendly targets, it experiences negative drift in CARs; and finally, the post takeover period entails negative CARs which are insignificant for the hostile ones and significant for the friendly ones.

Comparing the results with the aggregate analysis, the hostile (friendly) targets experienced higher (lower) positive CARs than an average target, in the pre-event period, the event period, the interim and the in the combined period of the event and the interim period together, and overall takeover period. But in post-event period they experienced higher (lower) but negative CARs than an average target.

Analysing the wealth impact, the hostile (friendly) targets gained on an average 100.7 (40.3) per cent due to initiation of takeover attempt. This is comprised of of 59.2 (42.3) per cent in event period, 35.3 (-1.5) per cent in interim period, and 6.2 (-0.5) per cent in pre-event period. Though in post-event period they lost 31.9 (19.6) per cent, still they realised net 68.8 (20.7) per cent abnormal returns in overall takeover process leading maximisation of wealth of shareholders of the target.

The market behaviour appeared to be consistent with semi-strong form of efficiency. In relation to the hostile targets, the pre-event period showed positive but insignificant abnormal returns followed by the substantial and significant abnormal returns in the event period; while in the interim period returns were shifted upwards as the degree of hostility between the parties released additional information and increases the probability of higher price offers by the raiders. This behaviour strengthens the above proposition and is observed to be consistent with the results reported by Bradley, Desai and Kim (1983). However, the large but statistically insignificant negative CARs raises doubt but does not refute the consistency of market behaviour with semi-strong form of efficiency.

On the other hand, in relation to friendly targets, the pre-event period showed mixed and insignificant CARs followed by the substantial and significant abnormal returns in the event period. This behaviour strengthens the rejection of null hypothesis that market behaviour is not consistent with semi-strong form of efficiency. While in the interim period, the CARs showed a declining trend suggesting an earlier resolution of the uncertainty and possibility of receiving higher price from the raider on settling the deal. The continued negative shift of statistically significant CARs in post-event period weaken the inference that the market behaviour is consistent with the semi-strong form of efficiency.

The repetition of the similar pattern of CARs in post-event period (earlier, in the case of aggregate analysis) suggests inability of the market to sustain the level of share price it attained during the event and the interim period, once the uncertainty about the outcome of the deal got resolved. The comparision of of these results with that of aggregate analysis suggests that the latter averages the wealth impact of the hostile and the friendly takeover.

The analysis of the hostile and the friendly takeovers suggests that the resistance of the target management to takeover attempt increases the gains to target's shareholders. It is consistent with the findings of Franks and Harris (1989) that contested bids lead to higher target wealth effects in both the countries, namely ,the U.S. and the U.K.

3.2.3. **Class II : Successful vs Unsuccessful Takeovers**

The results of daily cumulative abnormal returns (CARs) with two hundred days interval from -50 day to +150 day for successful and unsuccessful takeovers are summarised in Table 3.3 (See: Appendix 3.5 and 3.6). The daily CARs for unsuccessful and successful takeovers are graphed in Fig.3.4 and 3.5 respectively. The analysis of data contained therein drives to the following inferences.

(i) The pre-event period (-50 day to -1 day), both for unsuccessful and successful takeovers, revealed mixed results were statistically insignificant For

unsuccessful targets, they were 0.009 (t value:0.079), 0.019 (t value:0.237) and -0.010 (t value:-0.125) for -50 to -1 day, -25 to -1 day, and -50 to -26 day respectively. On the other hand, for successful takeovers, CARs were 0.035 (t value:0.248), -0.029 (t value:-0.2934) and 0.063 (t value:0.644) for -50 to -1 day, -25 to -1 day, and -50 to -26 day respectively.

(ii) The event period (0 day to +5 day) revealed substantial and statistically significant cumulative abnormal returns. The CARs during this period for successful takeovers were 0.503 (t value:12.845), while for unsuccessful takeovers were 0.488 (t value:10.111).

(iii) The interim period (+6 day to +50 day), for unsuccessful takeovers revealed consistently positive and statistically significant CARs. However, for successful takeovers, it again showed mixed results with overall very small and insignificant but non zero (positive) CARs. For unsuccessful takeovers, the CARs from +6 day to +50 day were 0.287 with statistically significant t value of 2.681. Analysing further, the CARs from +6 day to +25 day and from +26 day to +50 day were 0.185 (t value: 2.582) and 0.103 (t value: 1.287) respectively, implying uncertainty about the result and intermittent release of information pushing up the share price due to prolonged negotiation on the deal. The combined results of the event and the interim period showed that the unsuccessful targets experienced

substantially high and statistically significant CARs of 0.790 (t value:6.924). In contrast, for successful takeovers the CARs from +6 day to +50 day were 0.006 with statistically insignificant t value of 0.494. The CARs from +6 day to +25 day and from +26 day to +50 day were 0.035 (t value: 0.393) and -0.029 (t value: -0.292) respectively. This implied the immediate resolution about the outcome of the deal and therefore, no further rise in the share prices. The combination of the results of the event period and the interim period showed that the successful targets experienced the significant CARs of 0.494 (t value:3.509) which were substantially less than the unsuccessful ones.

(iv) The post-event period (+51 day to +150 day) for the unsuccessful and successful takeovers, revealed substantial but negative CARs which were statistically insignificant for the former and significant for the latter. For the unsuccessful targets, the CARs, from +51 to +150 day were -0.169 with statistically insignificant t value of -1.059. Analysing further, the CARs from +51 day to +75 day, +76 day to +100 day, and from +101 day to +150 day were 0.004 (t value:0.0520), -0.013 (t value: -0.167), and -0.160 (t value:-1.417) respectively, implying the inability of the market to sustain the share prices at a level achieved in the event and the interim period, once outcome of the deal was known. It might be due to the frustration of the target's shareholders for not getting expected higher

price in the near future. On the other hand, for the successful targets, the CARs, from +51 to +150 day were -0.386 with statistically significant. (t value: -1.960). Analysing further, the CARs from +51 day to +75 day, +76 day to +100 day, and from +101 day to +150 day were -0.085 (t value:-0.860), -0.094 (t value: -0.954), and -0.208 (t value:-1.489) respectively, implying continued negative drift of CARs (statistically significant) in post-event period with closure of the deal.

(v) Analysing the overall process, from -50 day to +150 day, the unsuccessful targets experienced substantial and significantly positive CARs (0.630; t value:2.781) and the successful targets also experienced positive but small and insignificant CARs (0.142; t value: 0.509) during this period.

The above results imply that for the unsuccessful and the successful targets, the pre-event period does not show statistically significant non-zero abnormal returns; the event period consistently shows significant and substantial non zero abnormal returns in both the cases; the interim period, for the unsuccessful ones, pushes the positive CARs up to a new peak while, in contrast, for the successful targets, it experiences negative drift in CARs; and finally, the post takeover period entails negative CARs which are, for unsuccessful ones smaller (as compared to their counterparts) and insignificant while for the successful ones, they are

large and significant.

Analysing the wealth impact, the unsuccessful (successful) targets, gained on an average 79 (49) per cent due to initiation of takeover attempt. This is comprised of of 50.3 (48.8) per cent in event period, 28.7 (0.6) per cent in interim period, and 0.9 (3.5) per cent in pre-event period. Though in post-event period they lost 16.9 (38.6) per cent, still they realised net 63 (14.2) per cent CARs in overall takeover process.

The market behaviour appeared to be consistent with semi-strong form of efficiency. In relation to the unsuccessful targets, the pre-event period showed positive but insignificant abnormal returns followed by the substantial and significant abnormal returns in the event period; while in the interim period returns were shifted upwards as uncertainty over the outcome of the deal increased which fuelled the expectation of getting higher share price, and released additional information for revaluation of the target. This behaviour strengthens the above proposition. However, the large but statistically insignificant negative CARs in post-event period questions but does not refute the consistency of market behaviour with semi-strong form of efficiency. The repetition of the similar pattern of CARs in post-event period (earlier in case of aggregate analysis and hostile targets) leads to an inference that the market was unable to sustain the level of share price it attained in the event period and the interim period, once the uncertainty

about the outcome of the deal got resolved (though CARs were not statistically different from zero in all the cases).

On the other hand, in relation to successful targets, the pre-event period showed mixed and insignificant CARs followed by the substantial highly significant abnormal returns in the event period. This behaviour strengthens the rejection of null hypothesis that market behaviour is not consistent with semi-strong form of efficiency. In the interim period the CARs started declining, which suggests an earlier resolution of the uncertainty about the out come of the deal. The continued negative shift of CARs in post-event period with statistical significance is similar to the results of friendly targets which enforces the doubt that whether the market behaviour is consistent with the semi-strong form of efficiency or not.

The comparision of these results with that of the aggregate analysis showed that the unsuccessful (successful) targets experienced higher (lower) positive CARs than an average target during different time periods of takeover process except post-event period. In the post even period they experienced lower (higher) negative CARs. The comparision of results with that of class I and II in different time segments revealed that unsuccessful and hostile targets and successful and friendly target exhibited similar pattern of CARs with different magnitude.

The analysis of successful takeovers suggests that takeovers are not initiated for more efficient reallocation of target resources exposing an element of *corporate raiding*. The analysis of the unsuccessful takeovers suggests that the takeover attempts either initiate reassessment of the value of the target or discipline the target management to improve its performance in future. This supports improved management hypothesis (Bradley, Desai and Kim, 1983) or internal efficiency hypothesis (Dodd and Ruback, 1977).

3.2.4. **Class III : Successful and Hostile & Successful and Friendly Takeovers**

The results of daily cumulative abnormal returns (CARs) analysis, with two hundred days interval from -50 day to +150 day for the successful and hostile, and the successful and friendly takeovers are presented in Appendix No.3.7 and 3.8 respectively. This results are further summarised and analysed periodically in Table No.3.4. The daily CARs for successful and hostile and successful and friendly takeovers are plotted on a graph from -50 day to +150 day in Fig.3.8 and 3.9 respectively. The analysis of data contained therein permits following inferences.

(i) The pre-event period (-50 day to -1 day) for the successful and hostile targets revealed substantial but statistically insignificant CARs, while the successful and friendly targets revealed marginally negative and statistically insignificant CARs. For the successful and hostile targets, they were 0.187 (t value:0.255),

0.017 (t value:0.032) and 0.170 (t value:0.328) for -50 to -1 day, -25 to -1 day, and -50 to -26 day respectively. On the other hand, for successful and friendly takeovers, they were -0.006 (t value:-0.055), -0.038 (t value:-0.505), and 0.032 (t value:0.428) for -50 to -1 day, -25 to -1 day, and -50 to -26 day respectively.

(ii) The event period (0 day to +5 day), for both the successful and hostile, and the successful and friendly targets revealed substantial and statistically significant CARs. The CARs during this period were 0.628 (t value:2.467) and 0.460 (t value:12.4961) for the successful and hostile, and the successful and friendly takeovers respectively.

(iii) The interim period (+6 day to +50 day), for the successful and hostile takeovers revealed substantially positive but statistically insignificant CARs. However, the successful and friendly takeovers showed marginally negative and insignificant CARs. For the successful and hostile takeovers, the CARs from (+6 day to +50 day) were 0.287 with statistically insignificant t value of 0.412; analysing further the CARs from +6 day to +25 day and from +26 day to +50 day were 0.197 (t value: 0.423) and 0.091 (t value: 0.175) respectively. The combination of the results of the event and the interim period, the successful and hostile targets experienced substantially high but statistically

insignificant CARs of 0.915 (t value:1.233). In contrast, for the successful and friendly takeovers, the CARs from +6 day to +50 day were -0.053 with statistically insignificant t value of -0.520; analysing further the CARs from +6 day to +25 day and from +26 day to +50 day were 0.002 (t value: 0.033) and -0.055 (t value: -0.728) respectively. The combination of the results of the event period and the interim period showed that the successful and friendly targets experienced the significant CARs of 0.408 (t value:3.797) which were substantially less than the successful and hostile ones.

(iv) The post-event period (+51 day to +150 day) for both the successful and hostile and the successful and friendly takeovers, revealed substantial negative CARs which were statistically insignificant for the former and significant for the latter. For the successful and hostile targets, the CARs, from +51 to +150 day were -0.609 (t value of -0.586). Analysing further, the CARs from +51 day to +75 day, +76 day to +100 day, and from +101 day to +150 day were -0.115 (t value:-0.221), -0.084 (t value: -0.162), and -0.410 (t value:-0.558) respectively. On the other hand, for the successful and friendly targets, the CARs, from +51 to +150 day were -0.297 with statistically significant t value of -1.972. Analysing further, the CARs from +51 day to +75 day, +76 day to +100 day, and from +101 day to +150 day were -0.080 (t value:-1.059), -0.096 (t value: -1.272),

and -0.121 (t value:-1.141) respectively, implying continued negative drift of CARs (statistically significant) in post-event period with closure of the deal.

(v) Analysing the overall process, from -50 day to +150 day, the successful and hostile targets experienced large positive but statistically insignificant CARs (0.493, (t value:0.335)), while the successful and friendly targets also experienced positive but small and insignificant CARs (0.142, (t value: 0.509)).

The above results imply that for the successful and hostile targets, and the successful and friendly targets, the pre-event period does not show statistically significant non-zero abnormal returns; the event period consistently shows significant and substantial non zero abnormal returns in both the cases. The interim period, for the successful and hostile ones, pushes the positive CARs up to a new peak, on the contrary, for the successful and friendly targets, it experiences negative drift in CARs. The post takeover period exhibits negative CARs which are larger in case of successful and hostile ones, while for the successful and friendly ones, it experiences lower but statistically significant CARs. During the entire period, both the categories show insignificantly positive CARs which are more than four times in case of the successful and hostile targets to that of successful and friendly ones.

Analysis of the wealth impact reveals that the successful and hostile (the successful and friendly) targets gained on an average 100.2 (40.2) per cent due to initiation of takeover attempt. This is comprised of of 62.8 (46) per cent in event period, 28.7 (-5.3) per cent in interim period, and 18.7 (-0.6) per cent in pre-event period). In the post-event period, they lost 60.9 (29.7) per cent, accounting for 49.3 (10.5) per cent net CARs in overall takeover process.

The market behaviour appeared to be consistent with semi-strong form of efficiency. In relation to the successful and hostile targets, only the event period showed statistically significant abnormality in CARs, which strengthens the above inference. On the other hand, in relation to the successful and friendly targets, the event period and the post-event period showed statistically significant abnormal behaviour of CARs, which again tilts the needle of doubt on market behaviour being consistent with semi-strong form of efficiency.

3.2.5. **Class IV : Unsuccessful and Hostile vs Unsuccessful and Friendly Takeovers**

The results of the daily cumulative abnormal returns (CARs) analysis, with two hundred days interval from -50 day to +150 day for the unsuccessful and hostile, and the unsuccessful and friendly takeovers is presented in Appendix No.3.9 and 3.10 respectively. This results are further summarised and analysed periodically in Table No.3.5. The daily CARs for the unsuccessful and hostile and the unsuccessful and friendly

takeovers are plotted on a graph from -50 day to +150 day in Fig.3.8 and 3.9 respectively.

(i) The pre-event period (-50 day to -1 day), for both the unsuccessful and hostile targets and the unsuccessful and friendly targets revealed small and statistically insignificant CARs which were positive in the case of former, and were negative in the case of latter. For the unsuccessful and hostile targets, they were 0.015 (t value:0.199), 0.006 (t value:0.067) and 0.009 (t value:0.102) for -50 to -1 day, -25 to -1 day, and -50 to -26 day respectively. On the other hand, for the unsuccessful and friendly targets, they were -0.017 (t value:-0.093), -0.050 (t value:-0.388), and 0.068 (t value:-0.520) for -50 to -1 day, -25 to -1 day, and -50 to -26 day respectively.

(ii) The event period (0 day to +5 day) for both the unsuccessful and hostile, and the unsuccessful and friendly targets revealed substantial and statistically significant CARs. The CARs during this period were 0.583 (t value:13.725) and 0.311 (t value:4.883) respectively for the unsuccessful and hostile, and the unsuccessful and friendly takeovers.

(iii) The interim period (+6 day to +50 day) for the unsuccessful and hostile takeovers revealed substantially positive and statistically significant CARs. However, for the unsuccessful and friendly

takeovers it showed positive but statistically insignificant CARs. For the unsuccessful and hostile takeovers, the CARs for the same period were 0.370 with statistically significant t value of 3.179. Decomposition of the CARs for +6 day to +25 day and +26 day to +50 day revealed 0.226 (t value: 2.909) and 0.144 (t value: 1.663) CARs for respective periods. The combination of the results of the event and the interim period, the unsuccessful and hostile targets experienced substantial and statistically significant CARs of 0.952 (t value:7.694). In contrast, for the unsuccessful and friendly takeovers, the CARs from +6 day to +50 day were 0.090 with statistically insignificant t value of 0.517; analysing further the CARs from +6 day to +25 day and from +26 day to +50 day were 0.086 (t value: 0.742) and 0.004 (t value:0.030) respectively. The combination of the results of the event period and the interim period showed that the unsuccessful and friendly targets experienced the significant CARs of 0.401 (t value:2.160) which were substantially less than that of the unsuccessful and hostile ones.

(iv) The post-event period (+51 day to +150 day) for both the unsuccessful and hostile and the unsuccessful and friendly takeovers, revealed substantial negative but statistically insignificant CARs. For the unsuccessful and hostile targets, the CARs, from +51 to +150 day were -0.212 with statistically insignificant t value of

-1.225. Analysing further, the CARs from +51 day to +75 day, +76 day to +100 day, and from +101 day to +150 day were 0.038 (t value:0.437), -0.033 (t value: -0.379), and -0.217 (t value:-1.773) respectively. On the other hand, for the unsuccessful and friendly targets, the CARs, from +51 to +150 day were -0.071 with statistically insignificant t value of 0.275. Analysing further, the CARs from +51 day to +75 day, +76 day to +100 day, and from +101 day to +150 day were -0.073 (t value:-0.559), 0.037 (t value: 0.289), and -0.036 (t value:-0.197) respectively.

(v) Analysing the overall process, from -50 day to +150 day, the unsuccessful and hostile targets experienced large positive and statistically significant CARs (0.755, (t value:3.071)), while the unsuccessful and friendly targets also experienced positive but insignificant CARs (0.312, (t value: 0.848)).

The above results imply that for the unsuccessful and hostile and the unsuccessful and friendly targets, the pre-event period does not show statistically significant non-zero CARs. The event period consistently shows significant and substantial non zero CARs in both the cases; the interim period also in both cases shows positive CARs which are for the unsuccessful and hostile ones, substantial and statistically significant, while for their counterparts they remain lower and statistically insignificant; and finally, the post takeover period entails negative CARs which are, for

the unsuccessful and hostile ones larger (as compared to their counterparts) and statistically significant while in contrast, for the unsuccessful and friendly ones, lower and statistically insignificant. In over all period, the unsuccessful and hostile targets experience substantially positive and statistically significant abnormal CARs, however, the unsuccessful and friendly targets experience positive but statistically insignificant CARs.

Analysing the wealth impact, the unsuccessful and hostile (the unsuccessful and friendly) targets gained on an average 96.7 (38.4) per cent due to initiation of takeover attempt. This is comprised of 58.3 (31.1) per cent in event period, 37 (9.0) per cent in interim period, and 1.5 (-1.7) per cent in pre-event period. Though in post-event period they lost -21.2 (-7.1) per cent, still they realised net 75.5 (31.2) per cent CARs in overall takeover process.

The market behaviour appeared to be consistent with semi-strong form of efficiency. In relation to the unsuccessful and friendly targets, only the event period showed statistically significant abnormality in CARs, which strengthens the above proposition. However, in relation to the unsuccessful and hostile targets, the event, the interim period and the post-event period showed statistically significant abnormal behaviour of CARs which weaken the proposition that the market behaviour was consistent with semi-strong form of efficiency.

3.2.6. **Analysis of Attitude with Outcome of Takeover Attempt**

The analysis in this part is based on Table 3.7 which permits following inferences for different time segments:

(i) During the pre-event period hostile targets generated positive CARs while the friendly generated negative CARs.

(ii) The comparison of the hostile and the friendly targets in case of the failure of takeovers showed substantial difference in CARs generated during the event (0.272) and the interim (0.551) period. This made an inference complicated in sense that whether it was failure of an attempt or hostility of attitude of the target that generated higher CARs during these two time segments. Hence, the successful and the unsuccessful takeovers were compared, keeping the hostility attribute constant. It revealed similar results for both the cases (0.915 and 0.952 for successful and unsuccessful takeovers respectively). Therefore, it might be inferred that it was the hostility and not the failure which raised the higher CARs during this period.

Analysing the event period further, it was observed that during this period the hostile (0.628) and the friendly (0.460) targets in successful takeovers generated higher CARs than the hostile (0.583) and the friendly (0.311) targets in unsuccessful takeovers. Thus, it may be inferred that the successful takeovers generated higher CARs during the event period

Analysing the interim period further, the comparison of the hostile and the friendly target in unsuccessful takeovers revealed strikingly different CARs (0.37 and 0.90 for the hostile and the friendly targets respectively). This again poses difficulty in arriving at meaningful inference about the effect of the failure in the interim period. Similar pattern of CARs revealed in the hostile and the friendly targets in the successful takeovers. Hence, the successful and the unsuccessful targets were compared keeping the attribute of hostility constant. The result of CARs (0.370 for the unsuccessful and 0.287 for the successful targets in hostile takeovers) signalled an inference that it was the hostility which generated CARs in this period and not the outcome of the attempt.

(iii) Two intriguing patterns were observed in the post-event period: Firstly, the successful targets suffered more than the unsuccessful ones. Secondly, the hostile targets suffered more than the friendly ones. Data contained in Table 3.7 revealed that the result of the takeover attempt decided the pattern of CARs in post-event period. and the friendly targets respectively in successful takeovers. This is evidenced by the fact that in successful takeovers, the hostile and the friendly ones declined 66.5 and 72.8 per cent respectively from their respective peak recorded in event and interim period, while in unsuccessful takeovers the corresponding decline in CARs for the

hostile and the friendly ones were 17.7 and 22 percent respectively. Secondly, the analysis of Table 3.7., reveals that hostile targets suffered more than friendly ones irrespective of the outcome of takeovers. Simultaneously, it was observed that friendly targets in successful takeovers suffered more than the hostile targets in unsuccessful takeovers. This might be due to either an expectation of higher bid from new bidder or renewal of the bid from the old bidder. The permanent revaluation of the target adjusting to the news releases during the takeover process is also not refuted. Therefore, the second proposition is only conditionally valid.

3.3. **CONCLUSION**

The results suggest that takeover attempts generate gains for the shareholders of the target. They are consistent with the hypothesis that managers' involvement in takeovers maximises shareholders' wealth. They are found consistent with the empirical evidences reported in the U.S.A. and the U.K. (Jensen and Ruback, 1983; Franks and Harris, 1989) respectively. The examination of the behaviour of CARs during the takeover process (from the pre-event to the post-event period) suggests that market behaviour seems to be consistent with semi-strong form of efficiency. The evidences are not found convincing.

The analysis of the hostile and the friendly takeovers

suggests that the resistance of the target management to the takeover attempt increases the gains to target's shareholders. It is consistent with the findings of Franks and Harris (1989) that contested bids lead to higher target wealth effects in both the countries, namely ,the U.S. and the U.K.

The analysis of successful takeovers suggests that takeovers are not initiated for reallocation of target resources more efficiently exposing an element of *corporate raiding*. The analysis of the unsuccessful takeovers suggests that the takeover attempts either initiate reassessment of the value of the target or discipline the target management to improve its performance in future. This supports improved management hypothesis (Bradley, Desai and Kim, 1983) or internal efficiency hypothesis (Dodd and Ruback, 1977).

To sum up, the foregoing analysis of target companies suggested that takeovers increase the shareholders' wealth and the market behaviour appeared to be consistent with semi-strong form of efficiency weak evidences.

TABLE 3.1. **Cumulative Abnormal Returns (CARs) Analysis**

All the Companies

	DAYS		CARs	t-VALUE
	FROM	TO		
PRE EVENT PERIOD	-50	-26	0.030	0.525
	-25	-1	-0.006	-0.099
	-50	-1	0.024	0.301
EVENT PERIOD	0	5	0.495	17.806
INTERIM PERIOD	6	25	0.107	2.115
	26	50	0.038	0.665
	6	50	0.145	1.906
	0	50	0.641	7.898
POST EVENT PERIOD	51	75	-0.083	-1.038
	76	100	-0.044	-0.779
	101	150	-0.174	-2.165
	51	150	-0.257	-2.265
OVERALL PERIOD	-50	150	0.408	2.531

Source: Appendix 3.2.

Table 3.2. Cumulative Abnormal Returns (CARs) Analysis

	Friendly Takeovers				Hostile Takeovers			
	DAYS		CARs	t-VALUE	DAYS		CARs	t-VALUE
PERIOD	FROM	TO			FROM	TO		
PRE EVENT PERIOD	-50	-26	0.011	0.215	3	-26	0.054	0.436
	-25	-1	-0.016	-0.320	-25	-1	0.008	0.065
	-50	-1	-0.005	-0.074	-50	-1	0.062	0.354
EVENT PERIOD	0	5	0.423	17.432	0	5	0.592	9.796
INTERIM PERIOD	6	25	0.023	0.524	6	25	0.220	1.992
	26	50	-0.038	-0.772	26	50	0.133	1.082
	6	50	-0.015	-0.226	6	50	0.353	2.134
	0	50	0.408	5.767	0	50	0.945	5.365
POST EVENT PERIOD	51	75	-0.078	-1.571	51	75	0.006	0.051
	76	100	-0.051	-1.020	76	100	-0.041	-0.332
	101	150	-0.067	-0.963	101	150	-0.284	-1.630
	51	150	-0.196	-1.977	51	150	-0.319	-1.293
OVERALL PERIOD	-50	150	0.207	1.474	-50	150	0.688	1.967

Source: Appendix 3.3 and 3.4.

Table 3.3. Cumulative Abnormal Returns (CARs) Analysis

	Successful Takeovers				Unsuccessful Takeovers			
	DAYS		CARs	t-VALUE	DAYS		CARs	t-VALUE
PERIOD	FROM	TO			FROM	TO		
PRE EVENT PERIOD	-50	-26	0.063	0.644	-50	-26	-0.010	-0.125
	-25	-1	-0.029	-0.293	-25	-1	0.019	0.237
	-50	-1	0.035	0.248	-50	-1	0.009	0.079
EVENT PERIOD	0	5	0.488	10.111	0	5	0.503	12.845
INTERIM PERIOD	6	25	0.035	0.393	6	25	0.185	2.582
	26	50	-0.029	-0.292	26	50	0.103	1.287
	6	50	0.006	0.044	6	50	0.287	2.681
	0	50	0.494	3.509	0	50	0.790	6.924
POST EVENT PERIOD	51	75	-0.085	-0.860	51	75	0.004	0.052
	76	100	-0.094	-0.954	76	100	-0.013	-0.167
	101	150	-0.208	-1.489	101	150	-0.160	-1.417
	51	150	-0.386	-1.960	51	150	-0.169	-1.059
OVERALL PERIOD	-50	150	0.142	0.509	-50	150	0.630	2.781

Source: Appendix 3.5 and 3.6.

Table 3.4. Cumulative Abnormal Returns (CARs) Analysis

PERIOD	Successful and Friendly Takeovers DAYS FROM	TO	CARs	t-VALUE	Successful and Hostile Takeovers DAYS FROM	TO	CARs	t-VALUE
PRE EVENT PERIOD	-50	-26	0.032	0.428	-50	-26	0.170	0.328
	-25	-1	-0.038	-0.505	-25	-1	0.017	0.032
	-50	-1	-0.006	-0.055	-50	-1	0.187	0.255
EVENT PERIOD	0	5	0.460	12.496	0	5	0.628	2.467
INTERIM PERIOD	6	25	0.002	0.033	6	25	0.197	0.423
	26	50	-0.055	-0.728	26	50	0.091	0.175
	6	50	-0.053	-0.520	6	50	0.287	0.412
	0	50	0.408	3.797	0	50	0.915	1.233
POST EVENT PERIOD	51	75	-0.080	-1.059	51	75	-0.115	-0.221
	76	100	-0.096	-1.272	76	100	-0.084	-0.162
	101	150	-0.121	-1.141	101	150	-0.410	-0.558
	51	150	-0.297	-1.972	51	150	-0.609	-0.586
OVERALL PERIOD	-50	150	0.105	0.495	-50	150	0.493	0.335

Source: Appendix 3.7 and 3.8.

Table 3.5. Cumulative Abnormal Returns (CARs) Analysis

	Unsuccessful and Hostile Takeovers				Unsuccessful and Friendly Takeovers			
PERIOD	DAYS		CARs	t-VALUE	DAYS		CARs	t-VALUE
	FROM	TO			FROM	TO		
PRE EVENT PERIOD	-50	-26	0.009	0.102	-50	-26	-0.068	-0.520
	-25	-1	0.006	0.067	-25	-1	0.050	0.388
	-50	-1	0.015	0.119	-50	-1	-0.017	-0.093
EVENT PERIOD	0	5	0.583	13.725	0	5	0.311	4.883
INTERIM PERIOD	6	25	0.226	2.909	6	25	0.086	0.742
	26	50	0.144	1.663	26	50	0.004	0.030
	6	50	0.370	3.179	6	50	0.090	0.517
	0	50	0.952	7.694	0	50	0.401	2.160
POST EVENT PERIOD	51	75	0.038	0.437	51	75	-0.073	-0.559
	76	100	-0.033	-0.379	76	100	0.037	0.289
	101	150	-0.217	-1.773	101	150	-0.036	-0.197
	51	150	-0.212	-1.225	51	150	-0.071	-0.275
OVERALL PERIOD	-50	150	0.755	3.071	-50	150	0.312	0.848

Source: Appendix 3.9 and 3.10.

Table 3.6. Cumulative Abnormal Returns (CARs) Analysis

			All Companies		Successful		Unsuccessful		Friendly		Hostile	
PERIOD	DAYS FROM	TO	CARs	t-VALUE	CARs	t-VALUE	CARs	t-VALUE	CARs	t-VALUE	CARs	t-VALUE
PRE EVENTPERIOD	50	-26	0.030	0.525	0.063	0.644	-0.010	-0.125	0.011	0.215	0.054	0.436
	-25	-1	-0.006	-0.099	-0.029	-0.293	0.019	0.237	-0.016	-0.320	0.008	0.065
	-50	-1	0.024	0.301	0.035	0.248	0.009	0.079	-0.005	-0.074	0.062	0.354
EVENTPERIOD	0	5	0.495	17.806	0.488	10.111	0.503	12.845	0.423	17.432	0.592	9.796
INTERIMPERIOD	6	25	0.107	2.115	0.035	0.393	0.185	2.582	0.023	0.524	0.220	1.992
	26	50	0.038	0.665	-0.029	-0.292	0.103	1.287	-0.038	-0.772	0.133	1.082
	6	50	0.145	1.906	0.006	0.044	0.287	2.681	-0.015	-0.226	0.353	2.134
	0	50	0.641	7.898	0.494	3.509	0.790	6.924	0.408	5.767	0.945	5.365
POSTEVENTPERIOD	51	75	-0.083	-1.038	-0.085	-0.860	0.004	0.052	-0.078	-1.571	0.006	0.051
	76	100	-0.044	-0.779	-0.094	-0.954	-0.013	-0.167	-0.051	-1.020	-0.041	-0.332
	101	150	-0.174	-2.165	-0.208	-1.489	-0.160	-1.417	-0.067	-0.963	-0.284	-1.630
	51	150	-0.257	-2.265	-0.386	-1.960	-0.169	-1.059	-0.196	-1.977	-0.319	-1.293
OVERALLPERIOD	-50	150	0.408	2.531	0.142	0.509	0.630	2.781	0.207	1.474	0.688	1.967

Source : Appendix3.2, 3.3, 3.4, 3.5, and3.6.

Table 3.7. Cumulative Abnormal Returns (CARs) Analysis

			Unsuccessful Takeovers				Successful Takeovers			
			Hostile		Friendly		Hostile		Friendly	
PERIOD	DAYS FROM	TO	CARs	t-VALUE	CARs	t-VALUE	CARs	t-VALUE	CARs	t-VALUE
PRE EVENT PERIOD	-50	-26	0.009	0.102	-0.068	-0.520	0.170	0.328	0.032	0.428
	-25	-1	0.006	0.067	0.050	0.388	0.017	0.032	-0.038	-0.505
	-50	-1	0.015	0.119	-0.017	-0.093	0.187	0.255	-0.006	-0.055
EVENT PERIOD	0	5	0.583	13.725	0.311	4.883	0.628	2.467	0.460	12.496
INTERIM PERIOD	6	25	0.226	2.909	0.086	0.742	0.197	0.423	0.002	0.033
	26	50	0.144	1.663	0.004	0.030	0.091	0.175	-0.055	-0.728
	6	50	0.370	3.179	0.090	0.517	0.287	0.412	-0.053	-0.520
	0	50	0.952	7.694	0.401	2.160	0.915	1.233	0.408	3.797
POST EVENT PERIOD	51	75	0.038	0.437	-0.073	-0.559	-0.115	-0.221	-0.080	-1.059
	76	100	-0.033	-0.379	0.037	0.289	-0.084	-0.162	-0.096	-1.272
	101	150	-0.217	-1.773	-0.036	-0.197	-0.410	-0.558	-0.121	-1.141
	51	150	-0.212	-1.225	-0.071	-0.275	-0.609	-0.586	-0.297	-1.972
OVERALL PERIOD	-50	150	0.755	3.071	0.312	0.848	0.493	0.335	0.105	0.495

Source : Appendix 3.7, 3.8, 3.9 and 3.10.

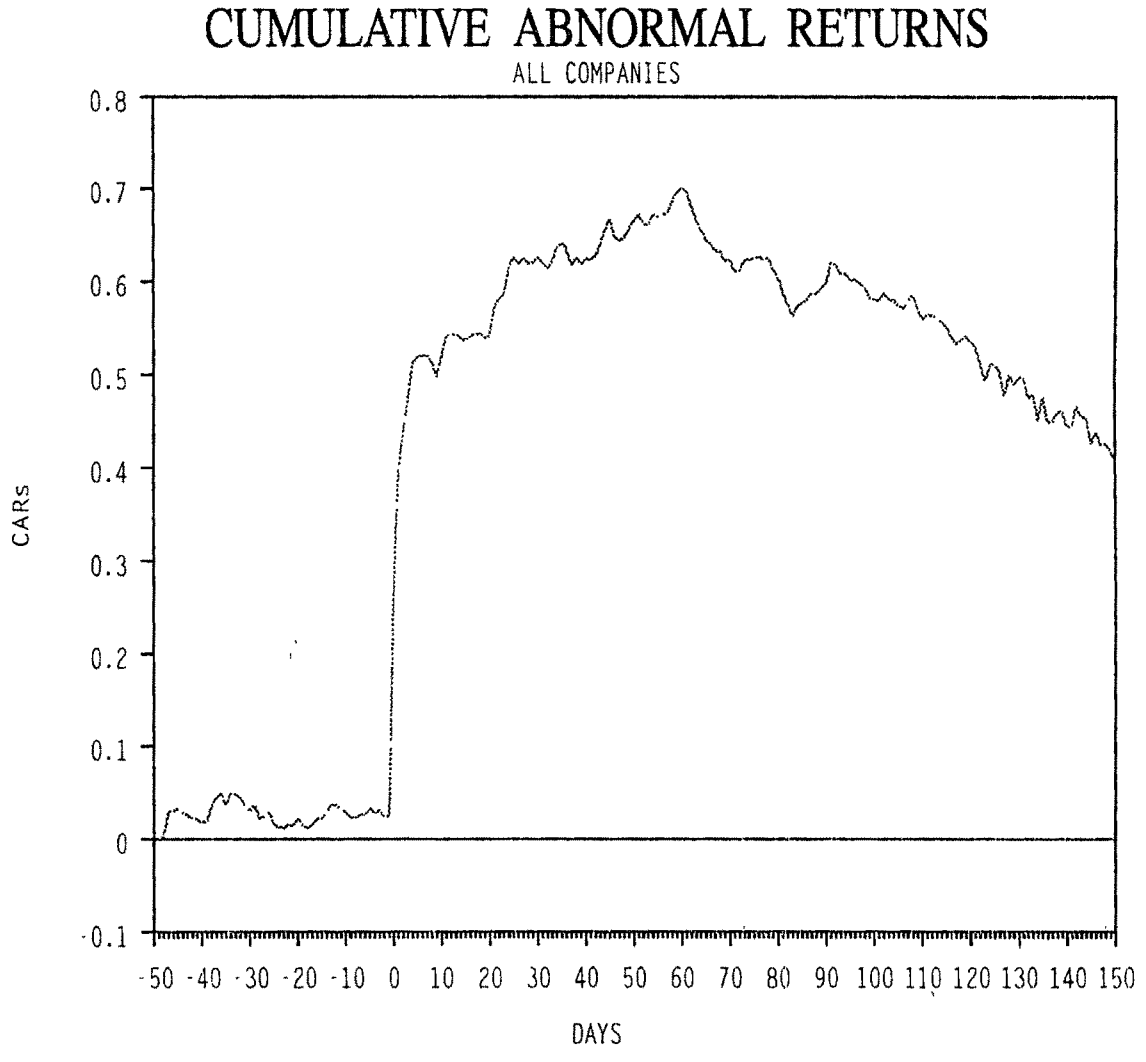
CUMULATIVE ABNORMAL RETURNS
ALL COMPANIES
CARs
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
DAYS

Fig. 3.1

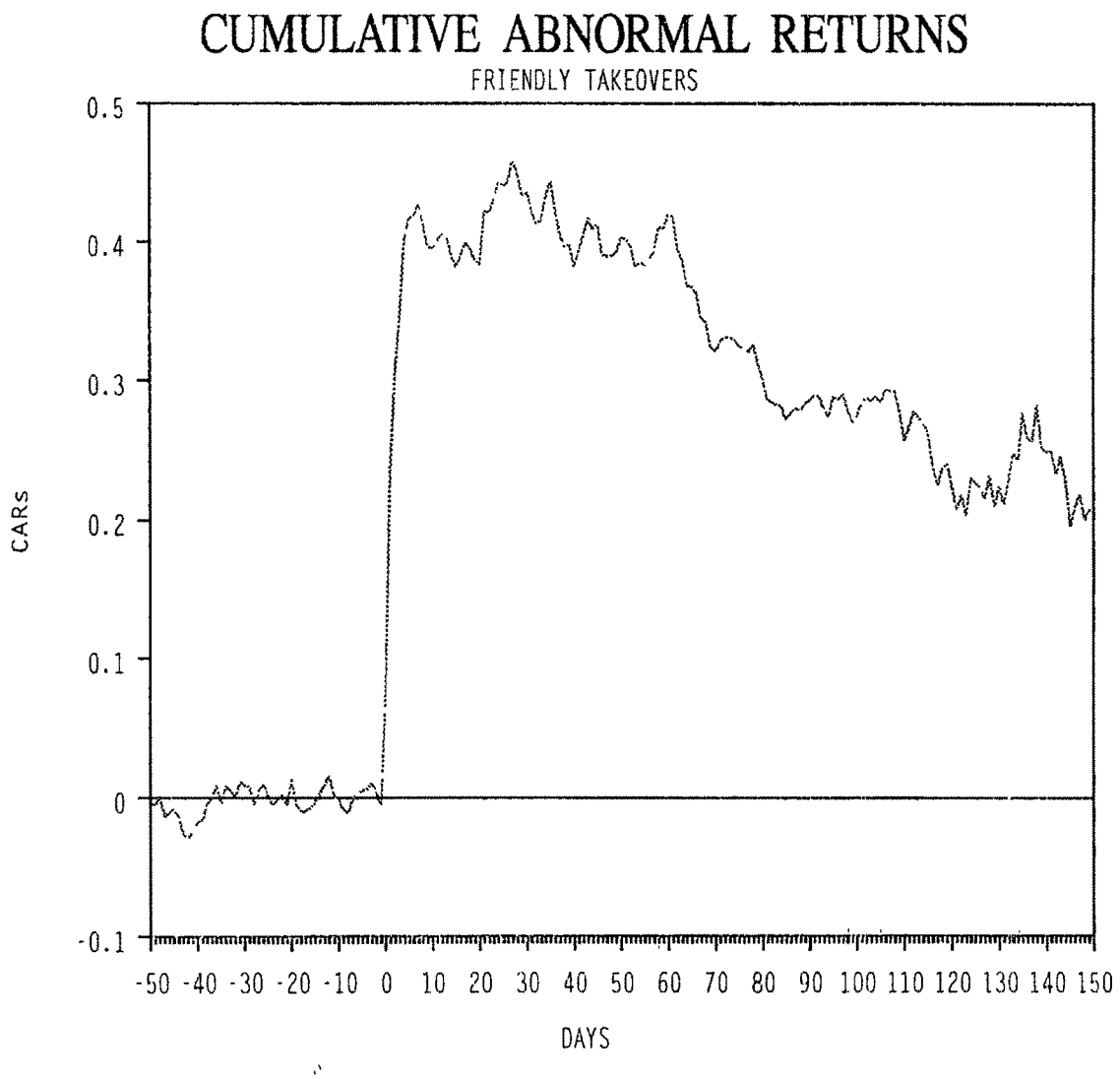
CUMULATIVE ABNORMAL RETURNS
FRIENDLY TAKEOVERS
CARs
0.5
0.4
0.3
0.2
0.1
0
-0.1
-50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
DAYS

Fig. 3.2

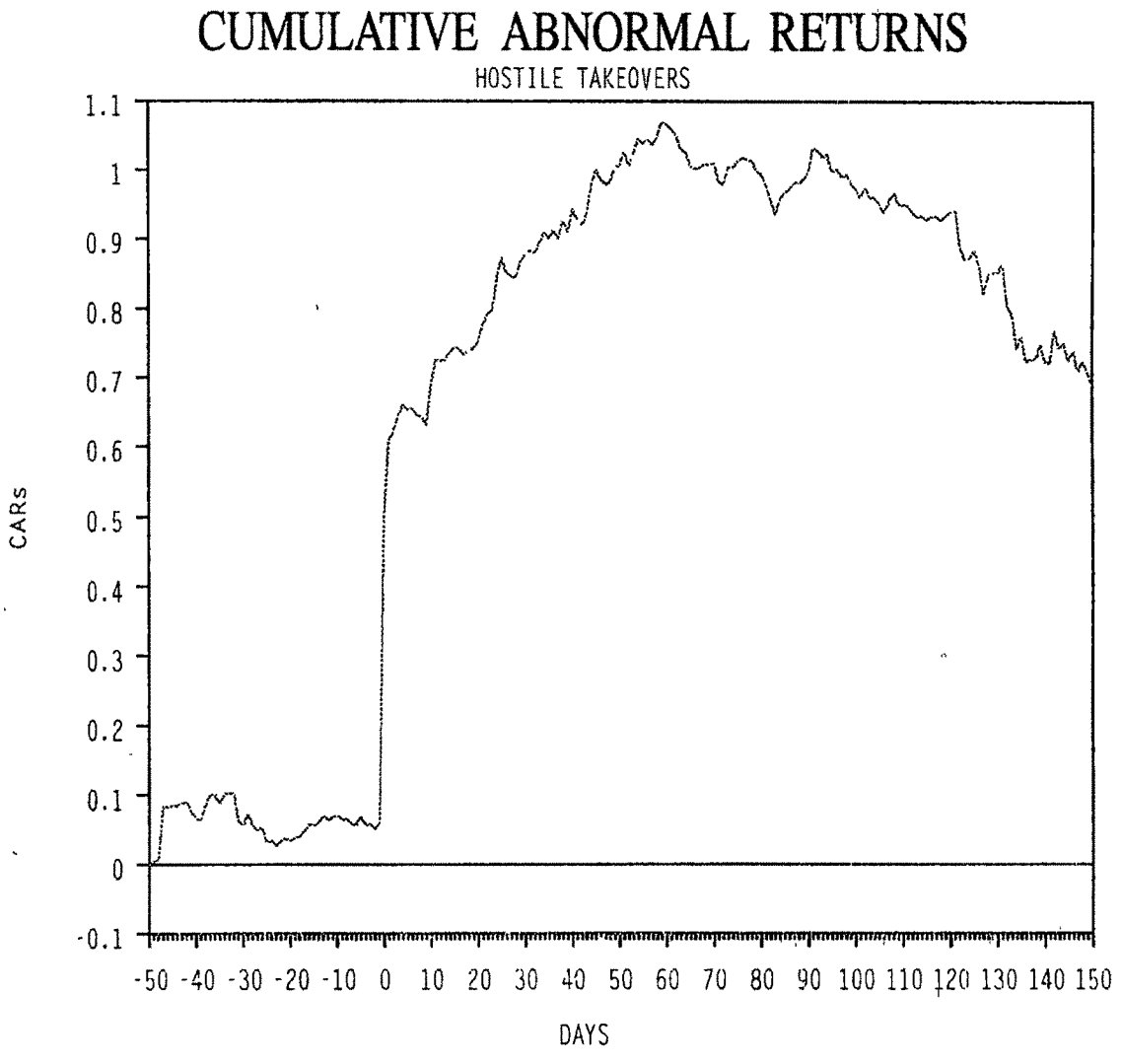
CUMULATIVE ABNORMAL RETURNS
HOSTILE TAKEOVERS
CARs
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
DAYS

Fig. 3.3

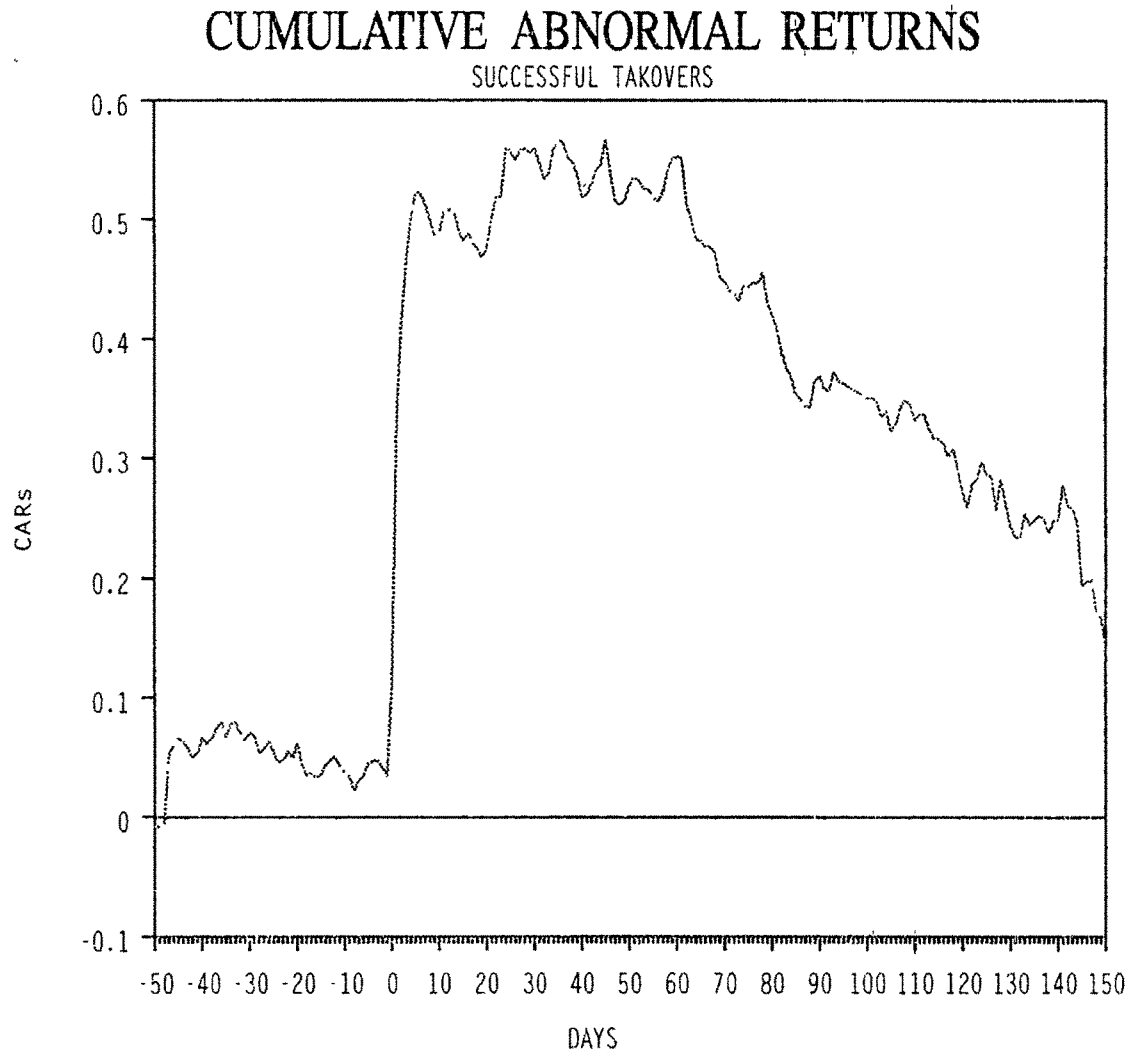
CUMULATIVE ABNORMAL RETURNS
SUCCESSFUL TAKOVERS
CARs
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
DAYS

Fig. 3.4

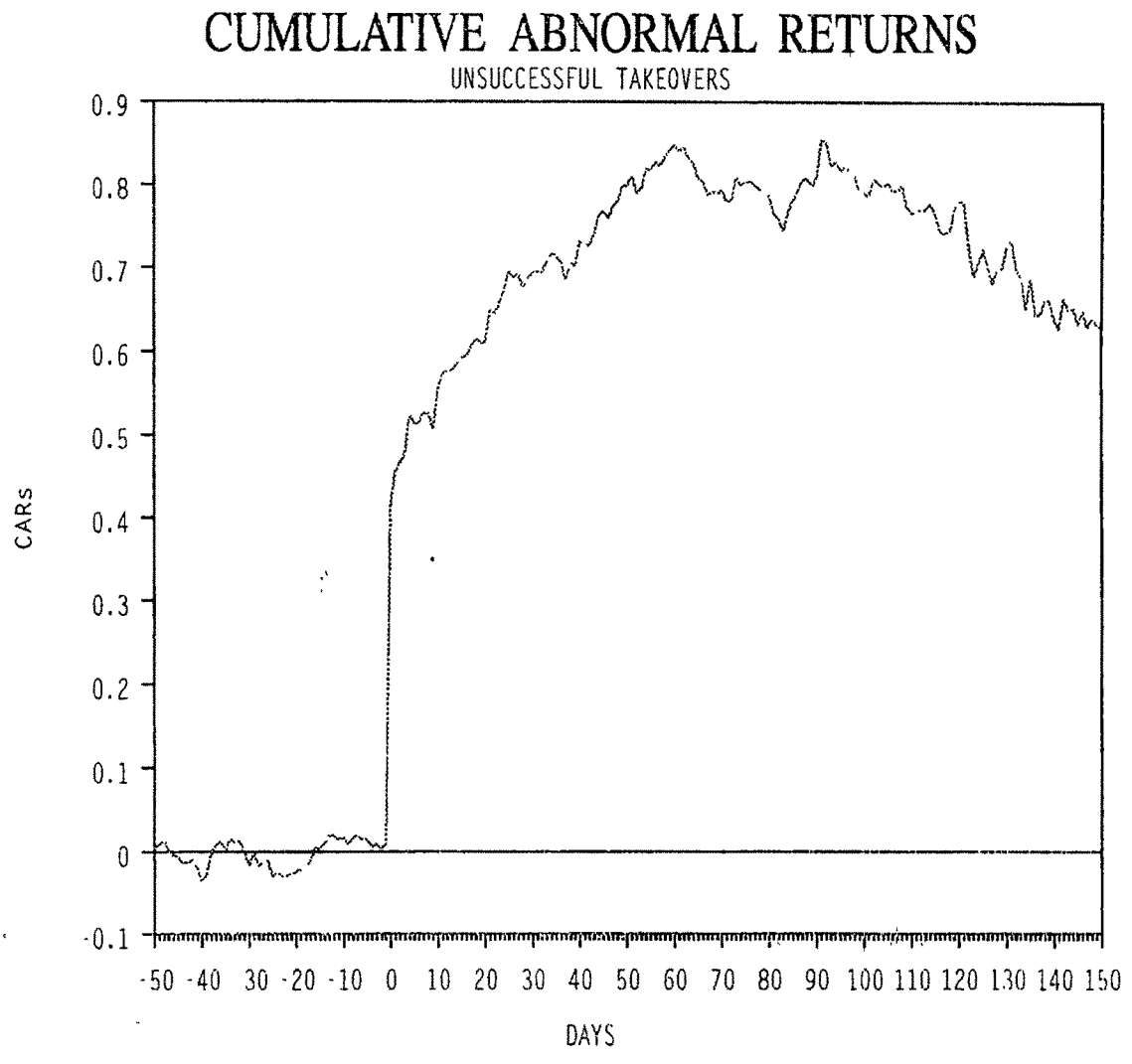
CUMULATIVE ABNORMAL RETURNS
UNSUCCESSFUL TAKEOVERS
CARs
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-50 -40 30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
DAYS

Fig. 3.5

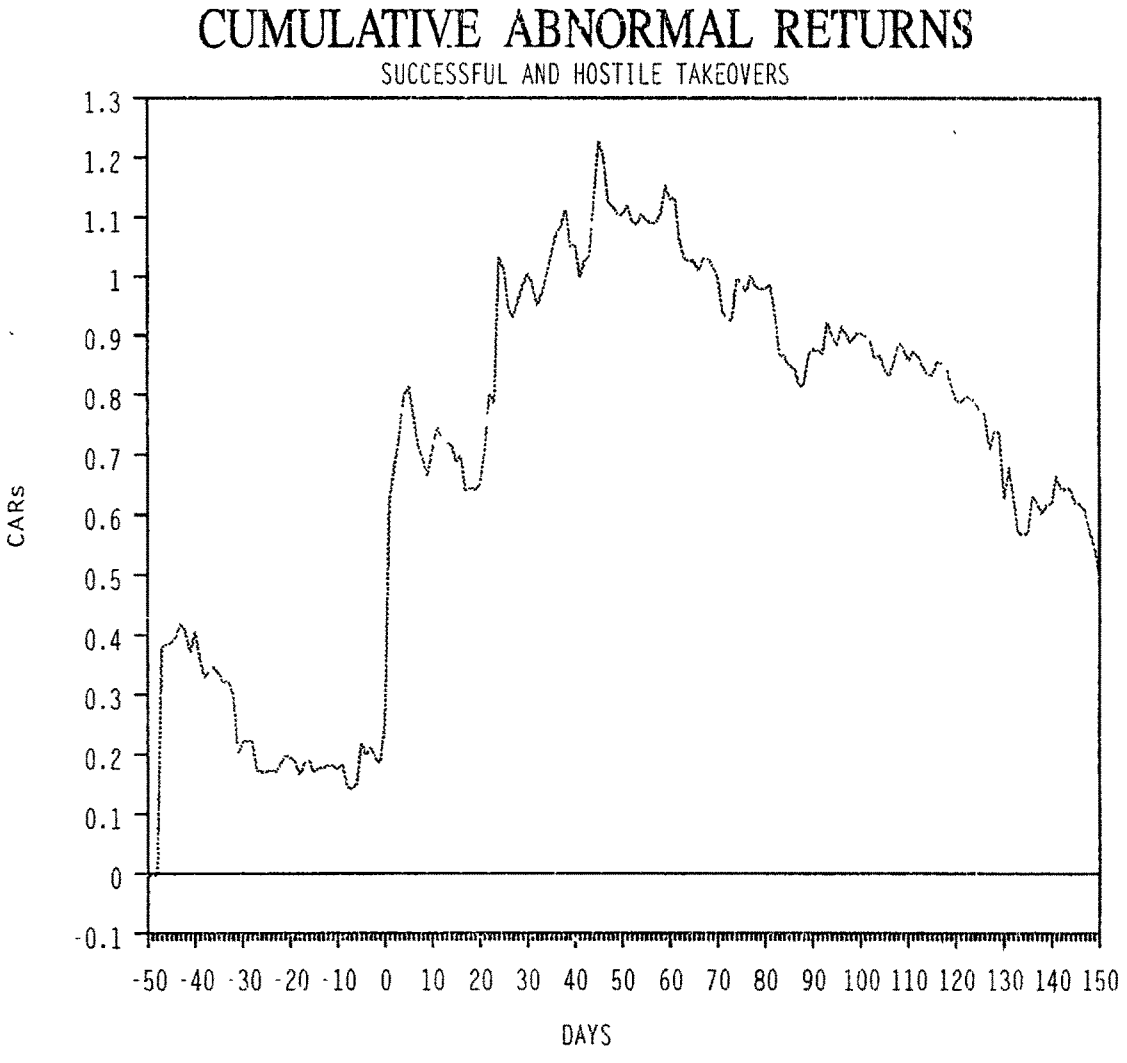
CUMULATIVE ABNORMAL RETURNS
SUCCESSFUL AND HOSTILE TAKEOVERS
CARs
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
DAYS

Fig. 3.6

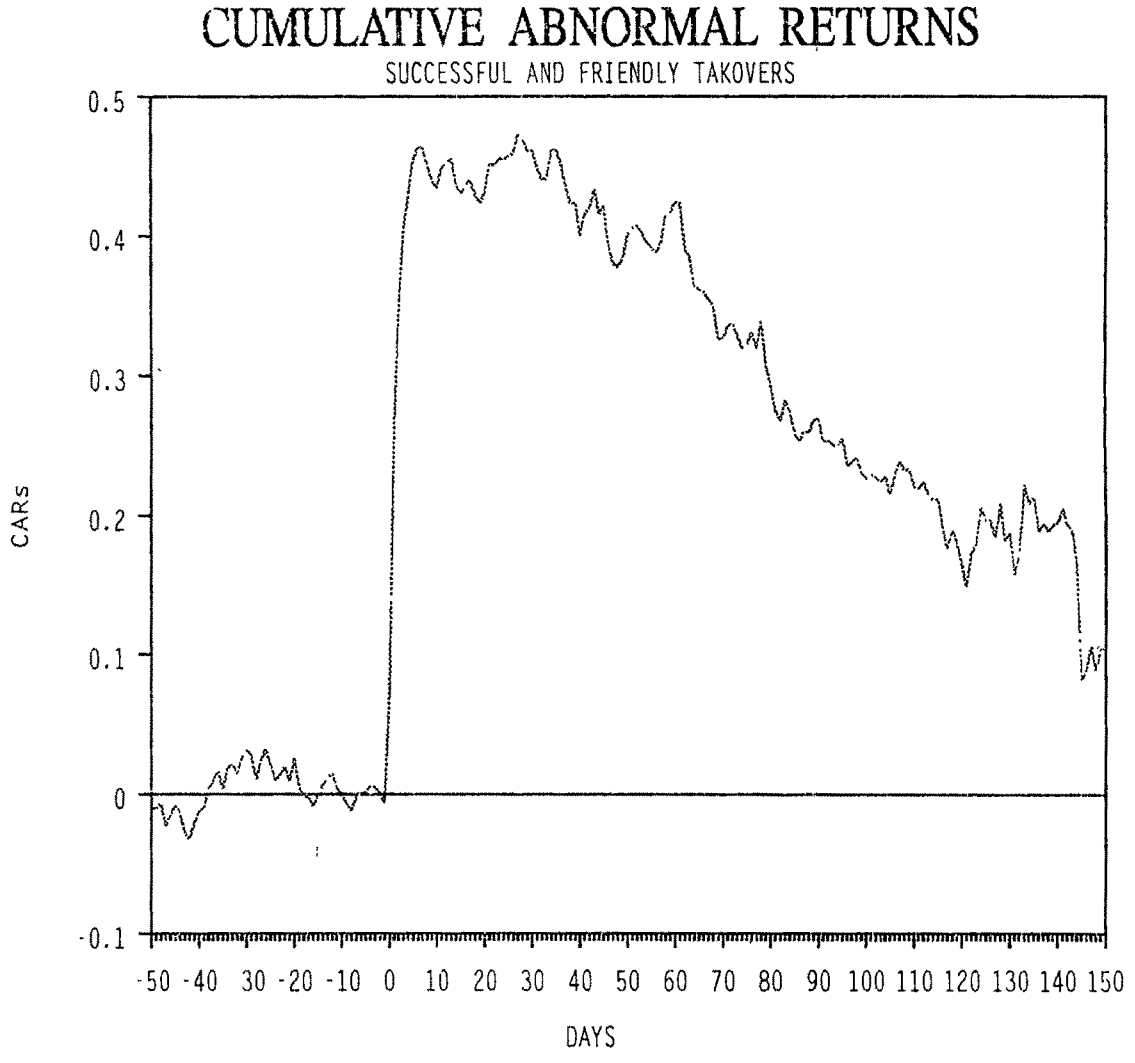
CUMULATIVE ABNORMAL RETURNS
SUCCESSFUL AND FRIENDLY TAKOVERS
CARs
0.5
0.4
0.3
0.2
0.1
0
-0.1
-50 -40 30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
DAYS

Fig. 3.7

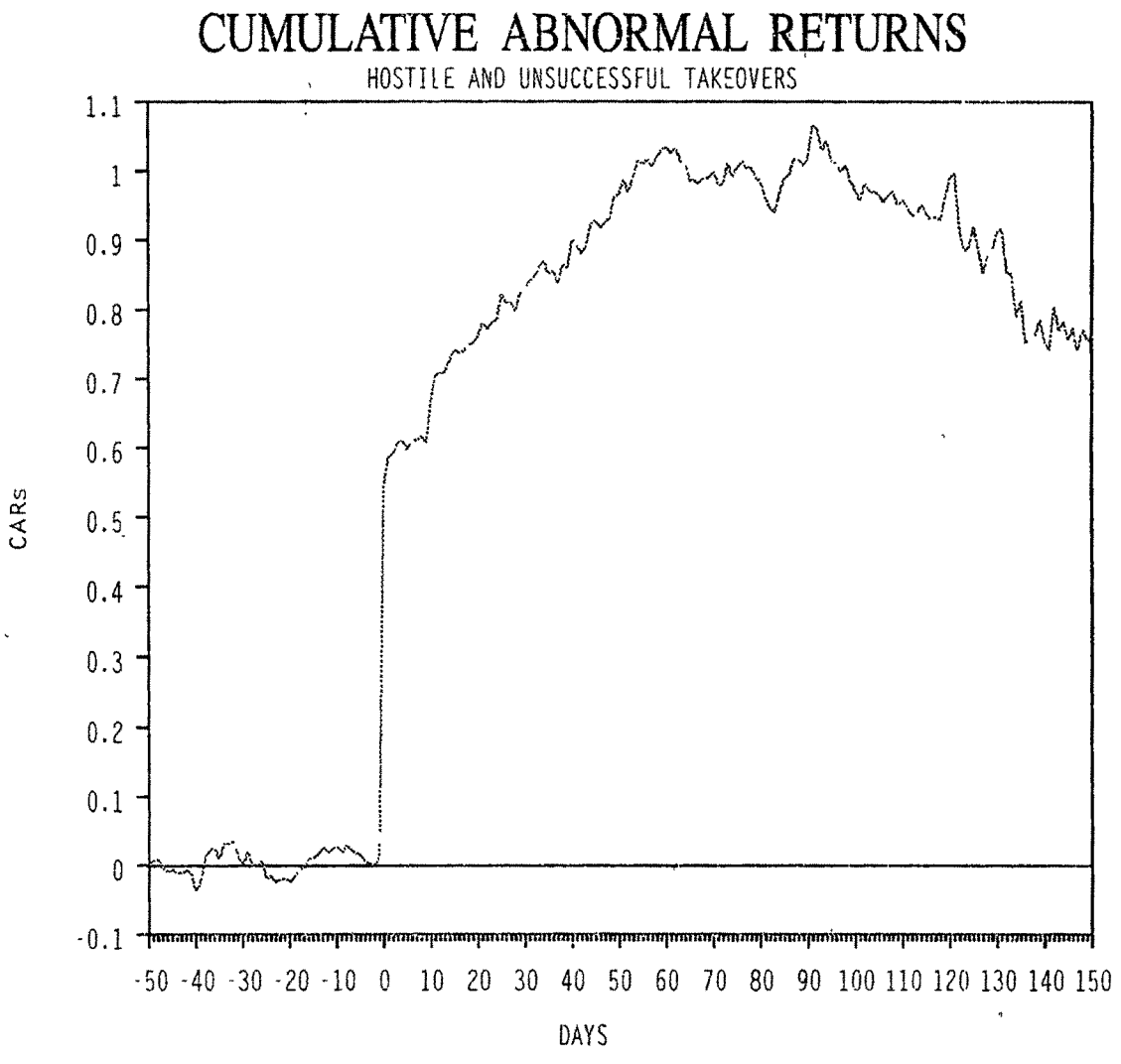
CUMULATIVE ABNORMAL RETURNS
HOSTILE AND UNSUCCESSFUL TAKEOVERS
CARs
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
DAYS

Fig. 3.8

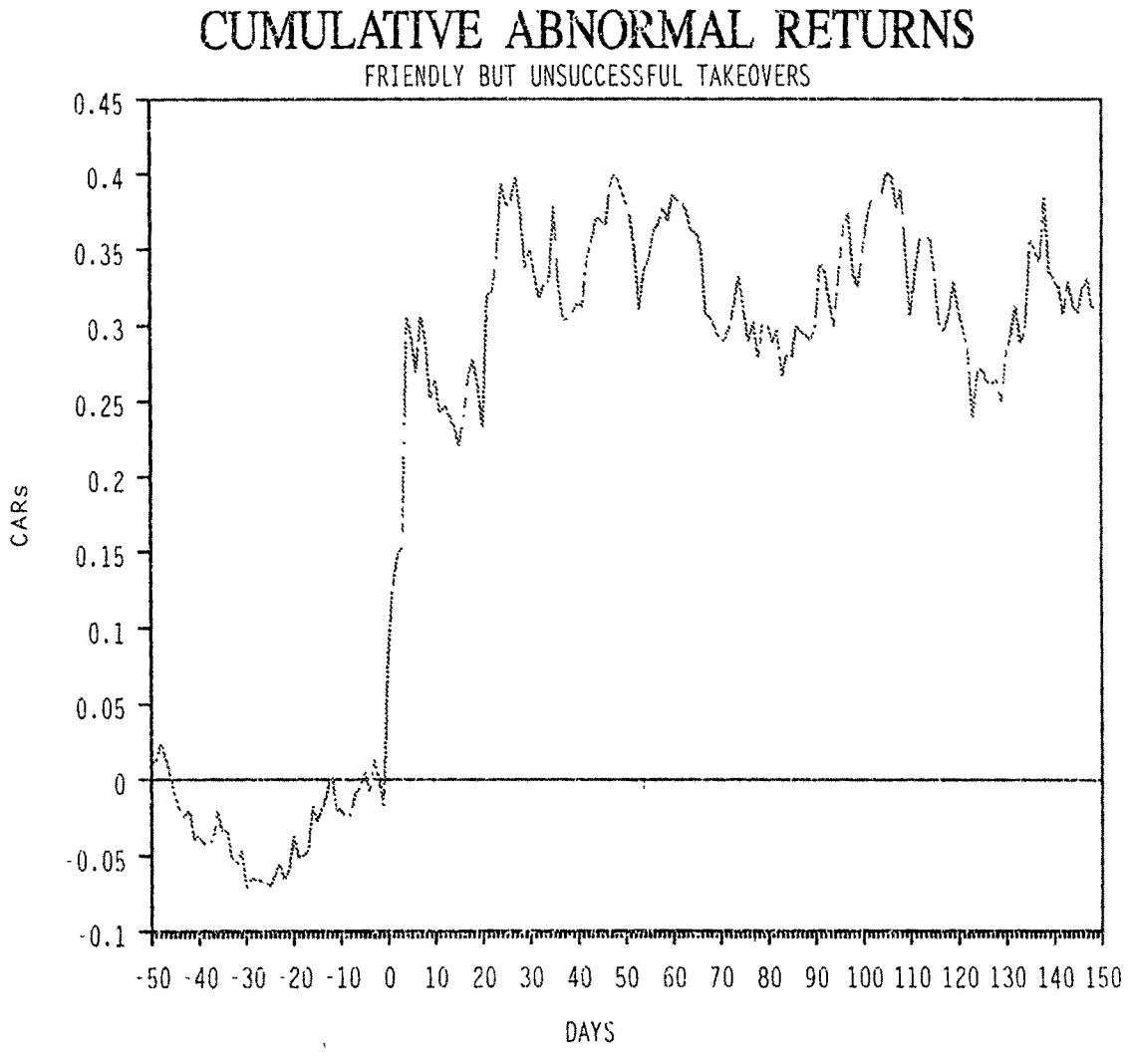
CUMULATIVE ABNORMAL RETURNS
FRIENDLY BUT UNSUCCESSFUL TAKEOVERS
CARs
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.05
-0.1
-50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
DAYS

Fig. 3.9